

“MODEL EMULSION QC PLAN”

**EMULSIFIED ASPHALT
QUALITY CONTROL PLAN FOR
XYZ EMULSION PRODUCERS**

**For
(Insert State Name)**

**For the Year
200X**

**XYZ Emulsion Producers
000 Thermal Crack Road
UpNorth, N.A. 00000**

Phone:

Fax:

Submitted By: _____
QC Plan Administrator Date

Approved By: _____
State Materials Engineer Date

**THE FOLLOWING QC PLAN FORMAT CONFORMS WITH
THE REQUIREMENTS OF AASHTO R-26**

1.0 – Emulsion Facility and Quality Control Information

(See R-26, Subsection 9.1)

1.1 - Facility Type (refinery, terminal, etc.) & Storage Information:

1.2 – Facility Location(s):

1.3 – QC Authorized Representative Name and Phone #:

1.4 – QC Tests to be Performed on Each Emulsion (Perform Specification compliance and

Manufacturing Guidance tests in accordance with AASHTO M208 or reasonable equivalent):

(NOTE: A testing table needs to be inserted here. An acceptable template is shown below.

(THIS CONTAINS EXAMPLE DATA ONLY**)**

Test	Method	MINIMUM TESTING FREQUENCY					
		CRS-1	CRS-2	CRS-2P	CMS-PX	OTHER Grades	OTHER Grades
Saybolt Furol Viscosity, SFS (1)	AASHTO T72	LDW	LDW	LDW	LDW		
Sieve, %	AASHTO T59	LDW	LDW	LDW	LDW		
Demulsibility, %	AASHTO T59	W	W	W	---		
Particle Charge	AASHTO T59	RA	RA	RA	RA		
Distillation Residue, %	AASHTO T59	LDW	LDW	LDW	LDW		
Weight per Gallon	AASHTO T59	RA	RA	RA	RA		
Oil Distillate, % by Volume	AASHTO T59	RA	RA	RA	---		
Tests on Residue by Hot plate evap. (< 400 F)							
Residue by boil down (3)	AASHTO T49 mod	LDW	LDW	LDW	LDW		
Penetration, dmm	AASHTO T49	LRW	LRW	---	LRW		
Tests on Residue by Oven Evap. At 325 F							
Residue by Oven Evap	AASHTO T49	---	---	LRW	---		
Penetration, dmm	AASHTO T49	---	---	LRW	---		
Softening Point, R&B, Deg. F	AASHTO T53	---	---	LRW	---		
Ductility, cm	AASHTO T51	AX	AX	---	---		
Elastic Recov., % (2)	AASHTO T301	---	---	LRW	---		
Solubility, %	AASHTO T44	X	X	X	X		

*Residue content may be determined by oven plate cook-off

(1) Notes for SFS.

(2) Notes for T301

(3) Notes for Residue by boil-down

Table ??.

Testing Performance Legend

- L Testing performed on every lot initially or otherwise.
- D Testing performed on each shipping day
- W Testing performed on a weekly basis
- M Testing performed on a monthly basis
- R Testing performed when raw materials change
- X Testing performed as requested by a NCDOT Engineer
- A Testing performed annually.

1.5 - QC Laboratory Name, Location, and Accreditation/Qualifications:
(Include reference to **Appendix A** where documents are found)

2.0 – Procedures for Emulsions Not in Compliance

(See R-26, Subsection 9.2)

2.1 – Agency Notification (Immediate notification of the State required):

2.2 – Identification of Material:

2.3 - Ceasing of Shipment:

2.4 – Notification Prior To Resuming Shipment:

2.5 - Disposition of Non-compliant Material:

(Rev. – May 2, 2006)

3.0 – Method and Frequency of Sampling & Testing

(See R-26, Subsection 9.3)

3.1 – Initial Frequency of Sampling & Testing:
(Include a reference to **Appendix C** where example worksheet/reports forms are found)

3.2 – Reduced Frequency of Sampling & Testing:

3.3 – Minimum Frequency of Specification Compliance Testing:

3.4 – QC Sampling & Testing for Guiding Manufacturer:

4.0 – Documentation and Preparation of Monthly Summary Reports

(See R-26, Subsection 9.4)

(Include reference to **Appendix D** where example reports are found)

5.0 – Procedures and Documentation for Transport Vehicles

(See R-26, Subsection 9.5)

(Include reference to Appendix E where example Bill of Lading, Transporter Certifications / Pre-load checklists are found)

(Rev. – May 2, 2006)

APPENDICES

A. Laboratory Accreditation/Qualifications

B. Example Random Sampling Report Forms (D 3665 & T 40, IF APPLICABLE)

C. Example Emulsion Worksheet & Test Results Report Form

D. Example Monthly Summary Report

E. Example Bill of Lading & Loading Affidavit

F. (Other Appendix Items as Determined Necessary to QC Plan)

(Rev. – May 2, 2006)

APPENDIX A

Laboratory Accreditation/Qualifications

(Rev. – February 29, 2000)

APPENDIX B

Example Random Sampling Report Forms (D 3665 & T 40)

IF the facility does not participate in Random sampling , please make a statement to that effect on this Appendix B sheet . NCDOT.

(Rev. – February 29, 2000)

APPENDIX C

Example Emulsion Worksheet & Test Results Report Form

(Rev. – May 21, 2003)

APPENDIX D

Example Monthly Summary Report

(Rev. – February 29, 2000)

XYZ Emulsion Producers Emulsion Sampling & Testing – Monthly Summary Report

TESTS PERFORMED	SAMPLE IDENTIFICATION & TEST RESULTS						
Emulsion Grade:							
Terminal Sample #/Batch #:							
Amount:							
Tank No.:							
Sampled Date:							
NCDOT Batch #:							
Date / Time of Test:							
Test performed by:							
Saybolt Furol Viscosity, SFS							
Sieve, %							
Demulsibility, %							
Particle Charge							
*Distillation Residue, %							
Oil Distillate, % by Volume							
Tests on Residue by Hot plate evap. (< 400 F)							
Residue by Boil-down							
Penetration, dmm @ XX Deg. F							
Tests on Residue by Oven Evap. At 325 F							
Residue by Oven Evaporation							
Penetration, dmm @ XX deg. F							
Softening Point, R&B, Deg. F							
Ductility, cm							
Elastic Recovery, %							
Solubility, %							
Weight per gallon							

(Rev. – September 29, 2006)

APPENDIX E

Example Bill of Lading & Loading Affidavit

(Rev. – February 29, 2000)

“Model EMULSION QC Plan”
Minimum Information Required on a Shipping Ticket (Bill of Lading)

THE NCDOT recognizes that Shipping Tickets/Bills of Lading may vary between Supplier and, accordingly, provides no prescribed format. However, as a minimum, the following information must be clearly provided on all Shipping Tickets/Bills of Lading:

1. The information provided by the 2002 North Carolina Department of Transportation (NCDOT) Standard Specifications for Roads and Structures Section 1020-1, Delivery and Acceptance of Asphalt Materials.
2. Name of Producer/Supplier and location.
3. A statement that the material has been tested and meets AASHTO and NCDOT Specifications.
4. The grade of the asphalt emulsion.
5. Delivery ticket number.
6. Date and time loaded into tanker (mm/dd/yyyy AM:PM)
7. Date and time shipped (mm/dd/yyyy AM:PM)
8. State project or purchase order number.
9. NCDOT assigned batch number.
10. Destination.
11. Name of consignee.
12. Trailer or car number.
13. Producer storage tank and batch number.
14. Quantity loaded in tons or gallons (metric tons or liters).
15. Specific gravity or pounds per gallon (kg/L) at 60°F (15.6°C)
16. Loading temperature.
17. Net Gallons at 60°F (15.6°C).
18. Stamp, write or print the NCDOT Supplier’s Certification on the delivery ticket or attach to the delivery ticket as described in the NCDOT Specification Section 1020.
19. Stamp, write or print the NCDOT Transporter’s Certification on the delivery ticket or attach to the delivery ticket as described in the NCDOT Specification Section 1020.
20. Other information may be added as deemed necessary.

(Rev. – June 17, 2011)

EXAMPLE LOADING AFFIDAVIT”

Loading Affidavit – ANYPLACE, USA Terminal

Today’s Date: _____ Load Ticket # _____

Driver Name: _____

Company: _____

- ◆ I certify that the product in my current load is compatible with product residue from my previous load.

Current Load: _____

Previous Load: _____

- ◆ I certify that my trailer is dry (free of moisture). YES NO
- ◆ I certify that my truck/trailer is in good mechanical condition. YES NO
- ◆ All valves are operable, dome lids and gaskets are in place, there are no tank or piping leaks, and all drains and unloading valves are closed. YES NO
- ◆ I certivn that mv trailer is free of retained residue. YES NO
- ◆ I understand that if my truck contains retain which exceeds 0.5% of transport capacity, it cannot be filled without the express permission of authorized ANYPLACE, USA Terminal

Driver Signature Date

(Rev. – February 29, 2000)

**“N.C. DEPT. OF TRANSPORTATION SUPPLIER’S AND TRANSPORTER’S
CERTIFICATION”**

”Stamp, write, or print these certifications on the delivery ticket, or attach to the delivery ticket.”

“This is to certify that this shipment of _____ gallons/liters or tons/metric tons of _____ grade asphalt including _____ gallons/liters of _____ anti-strip meet all requirements of NC Department of Transportation specifications.

Signed _____
“Authorized Representative of Supplier”

Note: Emulsion producers may choose to leave out the wording about anti-strip additive.

“This is to certify that this transport tank was clean and free from contaminating materials when loaded. The material transported on the previous load in this tanker was _____.

Signed _____
“Authorized Representative of Transporter”

APPENDIX F

(Other Appendix Items as Determined Necessary to QC Plan)

THIS SECTION SHOULD INCLUDE A COPY OF THE EXCEL 97 SPREADSHEET YOU ARE REQUIRED TO SUBMIT TO NCDOT PRESENTLY OR IN THE FUTURE WITH ALL THE QC DATA.